

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference INOL122645	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US04/09088	International filing date (<i>day/month/year</i>) 25 March 2004 (25.03.2004)	(Earliest) Priority Date (<i>day/month/year</i>) 27 March 2003 (27.03.2003)
Applicant INOLOGIC, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (See Box II).

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. _____



as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.



None of the figures

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:
DENNIS K. SHELTON
CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 FIFTH AVENUE
SUITE 2800
SEATTLE, WA 98101

Date of mailing (day/month/year) **19 AUG 2004** **DOCKETED**

Applicant's or agent's file reference

FOR FURTHER ACTION

See paragraph 2 below

INOL122645

International application No.

International filing date (day/month/year)

Priority date (day/month/year)

PCT/US04/09088

25 March 2004 (25.03.2004)

27 March 2003 (27.03.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): C07F 9/117; A61K 31/6615 and US Cl.: 558/161; 514/103

Applicant

INOLOGIC, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Fiona F. Powers

Telephone No. 571-272-1600

Form PCT/ISA/237 (cover sheet) (January 2004)

**PROCESSED
DOCKETING**

AUG 26 2004

CHRISTENSEN, O'CONNOR

DGM
MAR

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/09088

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US04/09088

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>2-10</u>	YES
	Claims <u>1</u>	NO
Inventive step (IS)	Claims <u>2-10</u>	YES
	Claims <u>1</u>	NO
Industrial applicability (IA)	Claims <u>1-10</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Claim 1 lacks novelty under PCT Article 33(2) as being anticipated by Ozaki et al. (US 5264605) or Siren et al. (US 5278332) or Ozaki et al. (US 5292913) or Ozaki et al. (Tetra. Lett., 27(27), 3157-3160, 1986) or Sawada et al. (Bioorg. & Med. Chem. Lett., 5(19), 2263-2266, 1995) or Watanabe et al. (Tetra. Lett., 31(2), 255-256, 1986).

The references disclose the claimed phenyl alkyl inositol polyphosphate compounds. Note column 9, Example 4, Compound 13 of Ozaki et al. (US 5264605); column 39, line 65 of Siren et al.; column 15, Example 8 of Ozaki et al. (US 5292913); Scheme 1, Compound 13 of Ozaki et al. (Tetra. Lett., 27(27), 3157-3160, 1986); Scheme 2 where R is 3-phenylpropyl of Sawada et al.; and the compounds on page 256, line 3 of Watanabe et al.

Claim 1 lacks an inventive step under PCT Article 33(3) as being obvious over Ozaki et al. (US 5264605) or Siren et al. (US 5278332) or Ozaki et al. (US 5292913) or Ozaki et al. (Tetra. Lett., 27(27), 3157-3160, 1986) or Sawada et al. (Bioorg. & Med. Chem. Lett., 5(19), 2263-2266, 1995) or Watanabe et al. (Tetra. Lett., 31(2), 255-256, 1986).

The references disclose the claimed phenyl alkyl inositol polyphosphate compounds. Note column 9, Example 4, Compound 13 of Ozaki et al. (US 5264605); column 39, line 65 of Siren et al.; column 15, Example 8 of Ozaki et al. (US 5292913); Scheme 1, Compound 13 of Ozaki et al. (Tetra. Lett., 27(27), 3157-3160, 1986); Scheme 2 where R is 3-phenylpropyl of Sawada et al.; and the compounds on page 256, line 3 of Watanabe et al. It would have been obvious to one of ordinary skill in the art to make compounds which are homologs of those disclosed in the references in order to obtain compounds with similar properties.

Claims 2-10 meet the criteria set out in PCT Article 33(2)-(3) because the prior art does not teach or fairly suggest the claimed invention.

Claims 1 to 10 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/09088

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07F 9/117; A61K 31/6615

US CL : 558/161; 514/103

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 558/161; 514/103

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
CAS ONLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,264,605 A (OZAKI et al.) 23 November 1993 (23.11.1993), column 9, Example 4, Compound 13.	1
X	US 5,278,332 A (SIREN et al.) 11 January 1994 (11.01.1994), column 39, line 65.	1
X	US 5,292,913 A (OZAKI et al.) 08 March 1994 (08.03.1994), column 15, Example 8.	1
X	OZAKI et al. Total Synthesis of Optically Active Myo-Inositol 1,4,5-Tris(phosphate). Tetrahedron Letters. 1986, Vol. 27, No. 27, pages 3157-3160, see Scheme 1, Compound 13.	1
X	SAWADA et al. Synthesis of 1-O-Alkyl- and 1-O-Acyl-Myo Inositol 3,4,5-Trisphosphates as Novel Analogues of Phosphatidyl-Myo-Inositol 3,4,5-Trisphosphate. Bioorganic and Medicinal Chemistry Letters. 1995, Vol. 5, No. 19, pages 2263-2266, Scheme 2.	1
X	WATANABE et al. An Efficient Phosphorylation Method Using a New Phosphitylating Agent, 2-Diethylamino-1,3,2-Benzodioxaphosphane. Tetrahedron Letters. 1990, Vol. 31, No. 2, pages 255-256, especially the compounds on page 256, line 3.	1

☐

Further documents are listed in the continuation of Box C.

☐

See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

29 July 2004 (29.07.2004)

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Date of mailing of the international search report

19 AUG 2004

Authorized officer

Fiona Powers

Telephone No. 571-272-1600